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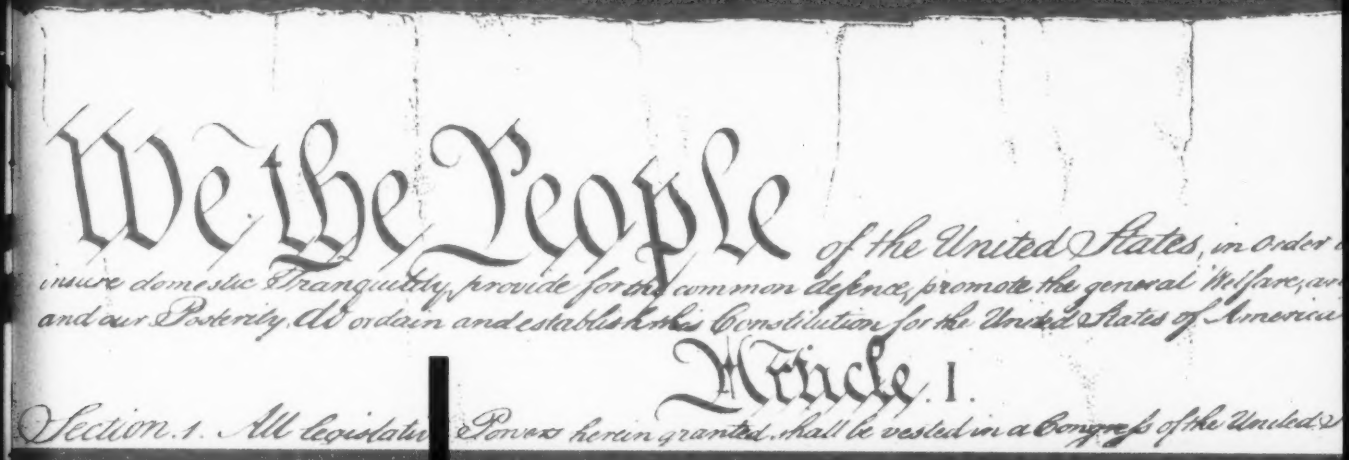
SEPTEMBER, 1960 Vol. 36—No. 9


We the People of the United States, in order
insure domestic Tranquility, provide for the common defence, promote the general Welfare, an
and our Posterity, do ordain and establish this Constitution for the United States of America
Article. I.
Section. 1. All legislative Powers herein granted shall be vested in a Congress of the United

On the Trail of Cargo Thieves

Teaching Careless Drivers to Care

Crusade Against Freight Losses

Too Many Big and Costlier Fires

Look What's Happened to Elevators

Another New Frontier Underwater

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FRONT COVER—*Preamble to the Constitution*

BACK COVER—*At the Constitution Shrine*

Cover Illustrations Courtesy the National Archives

OUR COVERS

SEVEN WORDS ALONE are sufficient to make our 173-year-old Constitution a living, compelling document this Constitution Week of 1960. They are the opening words of the preamble, which are illustrated on our front cover, "We the people of the United States, . . ."

In the debate on the issue of federal union vs. states' rights, which has persisted through the years, the advocates of a strong federal union cite those seven words of the Founding Fathers as overweighting in support of their position.

Constitution Week of 1960 will be the occasion for Americans to pause for reflection upon those words and upon the heritage they betoken, with a spirit akin to that of the family shown on our back cover.

As thousands of other Americans have done, this family stands in homage before the Constitution, the Declaration of Independence and the Bill of Rights safely enshrined in the National Archives Exhibition Hall in Washington, D. C. The Constitution, together with the Bill of Rights, being studied by the mother and daughter, are encased below the Declaration of Independence. ⊙

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CARGO THIEVES

HAVE IT TOO EASY

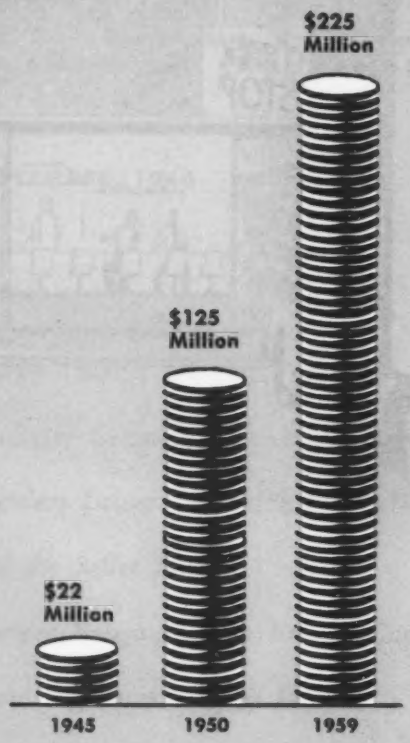
They work the streets and local roads for a rich haul in disposable valuables.

ROLLING THROUGH OHIO in the early morning hours, the driver of a big tractor-trailer parked his $35,000 load of men's suits at an all-night truck stop and stepped inside for a cup of coffee. When he returned a few minutes later, the vehicle and its valuable contents were gone —stolen by crooks who saw a tempting opportunity and took advantage of it.

Cargo thieves are staging an increasing number of such raids all across the nation, in small towns and suburbs as well as the larger cities. One expert estimates they cost shippers, truckers and insurance companies $225 million last year alone and predicts their haul in 1960 may rise to one-third of a billion dollars.

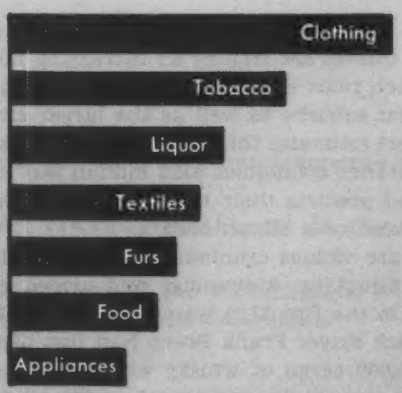
Some are vicious criminals who obtain their loot by hijacking, kidnapings and armed robberies. On the Brooklyn waterfront earlier this year, truck driver Frank Bocco had just picked up a $35,000 cargo of whisky when two armed men sprang onto the running boards and took over his vehicle. The crooks forced him into a waiting car and held him prisoner for three hours while they looted the truck. In Chicago,

POST-WAR CARGO THEFTS ARE BOOMING



Thefts of cargoes from cars and trucks have increased 100-fold since the end of World War II, according to estimates of the Cargo Protection Bureau in New York City. Predicted loss in 1960: one-third of a billion dollars.

CARGOES MOST OFTEN STOLEN IN 1959



Clothing, tobacco and liquor are always high on cargo thieves' list, but demand for other items varies. Transistor radios are now high.

Cargo Protection Bureau

Cargo Thieves Have It Too Easy

driver Roy Baer was temporarily blinded by acid thrown in his face when he refused to join two hoodlums in stealing his $25,000 load.

Hijacking accounts for only a small portion of today's cargo thefts, however, because crooks simply don't have to use such risky methods to get what they want. One favorite trick, according to police robbery authorities, is for the criminal to obtain key numbers on delivery trucks by calling the auto dealer and pretending to be a purchaser who has lost his ignition keys. Once he has the number, any locksmith can make a duplicate key, and the crook can make away with the vehicle any time he finds it unguarded and full of merchandise.

Sometimes the thief doesn't even have to go to that much trouble. Many drivers, especially those engaged in local deliveries, leave their trucks unlocked and unguarded while they go into stores and restaurants. Often they leave the ignition key dangling or the tailgate open, enabling cargo thieves to help themselves to one package or the entire load. Such careless practices have led to a sharp upswing in thefts from local delivery trucks and salesmen's cars.

Most cargoes, whether local or long-distance, are covered by motor truck cargo insurance. Truckers use it to cover their liability for the goods they carry, and shippers buy it to protect their own products while in transit on company-owned delivery vehicles or in the hands of a hired carrier. Theft has become a major cause of loss under both types of policies.

Cargo thieves will steal anything that can be sold, and that includes virtually everything that can be transported. According to statistics compiled by the Cargo Protection Bureau of New York, commodities most often stolen from vehicles are clothing, tobacco, liquor, textiles, furs, food and appliances, in that order. Other goods are by no means excluded, however. Recent thefts include a $328,000 shipment of drugs, a $40,000 load of steel, $75,000 worth of jewelry, a $1,000 package of sewing machine parts, $3,100 worth of dog food, and even a $1,500 load of toilet paper and a $1,000 shipment of tropical fish.

Amateurs may take such bizarre items as fish because they don't know what is inside a truck or package when they steal it, but professionals usually plan their raids in advance. As one veteran police officer put it, "Some of these guys take orders the same way a legitimate businessman would."

Nevertheless, even the best-laid plans may go astray. In one recent case reported by the FBI, a truck loaded with hot water heaters and plumbing supplies was stolen from the parking lot of a Cleveland hotel. A professional thief carefully waited until the driver went to supper, then opened the rear doors of the trailer and made a quick appraisal of the contents. Instead of stealing the truck immediately, he telephoned a "fence" and arranged to deliver the stolen goods to a tavern outside of town. Then he broke into the truck's cab, located a spare set of

Wide World

FBI agents release two truck drivers bound and gagged in New York by hijackers who attempted to steal their $100,000 cargo of select whisky. FBI ambushed and captured all five gang members.

Cartons of denim trousers, stolen from a Chicago company's loading dock, were abandoned by cargo thieves in an old factory building. City detectives recovered the $35,000 shipment on a tip.

United Press International

These Illinois state investigators were on the trail of a gang selling horse meat for hamburger when they caught the ringleader with this truck load of stolen cheese and butter. The crooks had been using two-way radio and an answering service to listen in on police calls so they could evade arrest.

ignition keys, and drove off to meet his underworld friend. After coming to terms, they proceeded to a farm and hid the loot behind some bales of hay until the fence could locate a buyer. He made the mistake of offering to sell to an honest plumbing manufacturer, who promptly informed the FBI. Seven persons, including the thief, were arrested and convicted.

Preventing such organized thievery is no simple matter, but law enforcement officials say it can be done. The FBI advises both truckers and shippers to begin at home by making certain the thefts aren't being committed or abetted by dishonest employees. Such losses can be particularly costly because they can go on for years before they are discovered. A Midwestern wholesale house, for example, filed a $1,500 insurance claim for the loss of eight garbage disposal units, and the insurer called in a detective agency to investigate. An undercover agent soon traced the thefts to a company truck driver, who not only had the disposal units in his possession, but a garage full of bathroom fixtures as well. He had been hauling off stolen goods along with legitimate shipments.

FBI Advises: Know Your Own Employees

The FBI recommends that companies make pre-employment investigations of prospective employees to reduce the possibility of such thefts. Other suggestions to discourage both internal and external losses include placing wire fences, watchmen and good lighting at terminals and loading areas; keeping adequate records so shortages can be detected, and enforcing more secrecy about shipping schedules to hamper would-be thieves in making their plans.

Once the goods have been loaded on a truck, station wagon or other delivery vehicle, protecting them from theft is mostly a matter of the driver's vigilance and the vehicle's mechanical defenses. Some companies provide two men for each truck so one can guard the vehicle while the other is making deliveries. Even if the driver is alone, he can eliminate many opportunities for thievery by locking all doors and by removing the ignition key whenever the truck is left unattended even for a few minutes. It's also a good idea for companies to change the locks on their vehicles occasionally, and to ask dealers not to give out key numbers by phone.

One of the most effective deterrents to cargo thieves is a good vehicle alarm system. Most insurance companies will make sizable reductions in rates for a firm that has them installed. Probably the best-known manufacturer of these devices is Babaco Alarm Systems, which leases a variety of systems designed to set off a siren whenever a thief tries to tamper with a vehicle's doors, windows, tailgate, hood or ignition. One such system not only makes a hideous noise that can be heard for blocks, but also stalls the engine if the thief persists in trying to drive the vehicle away. Cost of installation and the first year's rental varies from $50 to $225 per vehicle, with the annual charge thereafter running about half the initial amount.

A shortcoming of some alarms is that the driver may forget to turn them on when he leaves the vehicle, but some systems are designed so the alarm is set automatically when the ignition key is switched off. Even so, thieves sometimes manage to obtain keys or to cut alarm cables.

Law enforcement officers say more cargo thefts could be prevented if people would notify them of all attempted thefts, and cooperate fully in the investigation. One police officer told the JOURNAL: "Our most serious problem in dealing with such thefts is getting legal evidence that will stand up in court, and our job is made almost impossible when the victims refuse to help—usually because they don't want publicity. When that happens, I've found I can nearly always get action by calling the man's insurance company."

By encouraging full use of protective measures —including alert drivers, alarms and law enforcement—the nation's insurance companies hope eventually to make transit goods too hot to handle even for today's wily cargo thieves. ⊙

Talking bag contains a miniature tape recorder which yells for the police if an unauthorized person tries to carry it away. Jewelry salesmen use them as sample cases to thwart thieves.

'HALLS OF LEARNING' DEDICATED TO INSURANCE

Here's a preview of new center for insurance education and research.

AN EPOCHAL INSTITUTION in insurance education is making school news this September. It is the new half-million-dollar American Center for Insurance Education now taking on a distinctive campus appearance in the Main Line section of Philadelphia, at Bryn Mawr. When it opens early next year the center will house educational and research activities of the American College of Life Underwriters, the American Institute for Property and Liability Underwriters, Inc., the American Society of Chartered Life Underwriters, the Society of Chartered Property and Casualty Underwriters, and the Insurance Institute of America.

The five organizations, now located in Philadelphia, are outgrowths of the pioneer work in insurance education done by Dr. Solomon S. Heubner. It was in 1913, at a time when insurance careers were lightly regarded, that Dr. Heubner conceived of professional education for life insurance agents and executives. The American College of Life Underwriters opened in 1927 with Dr. Heubner at its helm as dean and president. Today he is president emeritus of the college and active in planning the new center. Now 78 years old, Dr. Heubner established the first college-level insurance course at the University of Pennsylvania and served on the school's faculty for more than half a century before retiring in 1953.

The American Institute of Property and Liability Underwriters, Inc., was formed in 1941 as a companion organization to the CLU. Professional staffs working in the new center will prepare study courses and tests that will enable career insurance personnel to gain certificates as Chartered Life Underwriters and Chartered Property and Casualty Underwriters. Comprehensive tests prepared in the Pennsylvania center are administered by local units of the societies, usually on college campuses.

Insurance Institute of America, an agency formed in 1909, formulates study programs and administers tests concerning basic insurance principles and practices. CPCU candidates often take IIA courses and tests first.

By serving as a national clearing house for insurance research and education, the new center will make a valuable contribution to the U. S. insurance industry. Although a campus without classrooms, its influence will be extended by the thousands of agents, underwriters and executives associated with insurance companies who have gained CLU and CPCU designation. The insurance education center's site is not far from the place where in 1689 the Quakers built William Penn Charter School, the first public school to teach such practical subjects as science and invention. Technical education has come a long way in the intervening 271 years, a fact demonstrated by the high caliber of professional and collegiate insurance education fostered by the American Center for Insurance Education. ⊙

CARELESS D

Citizens Traffic Safety Board

Rules of right-of-way at intersections are explained to students by Sergeant James Casey, head of the safety education unit of the Police Traffic Division, a sponsor of driver training program.

Upon completion of the driver course, traffic violators return to court, and instructor briefs judge on students' class records. If students have good attendance records and test scores, judge may suspend or ease traffic fines.

Spanish-speaking students who are new to Chicago receive lessons in traffic laws. The driver improvement school also offers classes to other foreign-speaking residents.

Dr. Arthur L. Conrad, director of the driver improvement classes, has seen more than 50,000 better drivers graduate from the school. Today his program is considered a model of excellence in its field.

Moffett Chicago

Copelin

S DRIVERS SHOULD KNOW BETTER

Thousands of them are being educated in Chicago's widely acclaimed driver improvement school.

TELLING DRIVERS they should learn how to drive is hardly the accepted way of becoming popular. However, traffic court judges in Chicago, by telling traffic violators just that, have been winning friends and influencing motorists by the thousands.

Chicago's Driver Improvement School, established four years ago in response to the city's shameful traffic fatality record, has graduated more than 50,000 motorists. Many of the graduates were ordered by a judge to attend the school because of their careless driving habits. Nearly all of the students, upon completion of the course, are grateful for being "sentenced" to take the driving course.

Dr. Arthur L. Conrad, director of the school, enjoys relating an incident involving the teenaged president of a Chicago hot rodders club. The youth was arrested for speeding and ordered to appear in traffic court. It was the lad's first traffic offense and the judge ordered him to the Driver Improvement School. The youth grudgingly arrived at his first class and soon found himself surprisingly interested in what the policeman in front of the room was saying. Four weeks later the young speeder graduated from the school with a perfect attendance record and a 100 per cent test score. The boy went back to his club members with a new idea—one which shows the effect that the driving classes had upon him. All members of the club, he ordered, must volunteer for the driving course. To remain in the club, each youth had to receive a perfect test score. Today the club has one of the finest driving records of any such group in the country.

Conrad, before opening the doors of the school in 1956, sought information from scores of cities with driver education programs. He examined their curriculums and consulted government agencies, traffic safety organizations, insurance companies and private corporations in an effort to make the school as effective as possible in curbing careless driving.

The school, a function of the Traffic Education and Safety Division of the Chicago Municipal Court, accepts volunteers as well as traffic violators. Students can take the course to prepare for their state driving exam or to erase bad driving habits that have accumulated through years of untested motoring. Each pupil attends four sessions, each two hours long. The first class deals with factors which cause accidents, such as improper attitudes toward the law, physical limitations and inattention. The second class teaches how and why an accident happens and how it can be prevented. Students are then drilled in correct driving techniques, pedestrian right of way, hand signaling, recognition of traffic signs, speed limits—everything but the actual driving of an automobile. Classes are informal, with vigorous question and answer periods.

After the course, graduation certificates are issued to those students who have completed the instruction and passed the final examination. To the volunteer students, the certificates could mean paying a lower insurance premium. For the violators who receive a good rating from their instructor, the judge often dismisses the pending traffic charge or lowers the fine. To every student, graduation means that he or she is a much better driver, completely aware of motoring responsibilities.

Dr. Conrad feels that if the students can acquire the proper driving attitude, the rest of the instruction falls into place naturally. The best traffic engineering and safety education program in the world would be ineffective against a city's traffic problem if the people had the wrong attitude toward solving the problem.

Chicago, until 1955, was finding itself perched disgracefully on top in the traffic death rate

among cities of more than a million population. The city's accident rate was also exceedingly high. In 1956, the first year of the Driver Improvement School, Chicago recorded 364 traffic deaths. This total was still far too high, but was 25 deaths fewer than the previous year's total. The figure has been dropping steadily to a point where safety officials this year expect the city's traffic death toll to fall below 300.

Much of the credit for this life saving goes to the driver training school, which is considered a model of excellence in its field. Chief Justice Raymond P. Drymalski of Municipal Court says of the school:

"When we can convince a driver with bad habits, who has a disrespect for the law and whose past actions indicate that he'll get into trouble again, that he can become a better driver, we've won a big battle in Chicago's war on traffic accidents. Drivers whose attitudes have been completely negative come out of these classes with a desire to be good, even expert, drivers with respect for the law because they understand the law."

Few Violation Repeaters Among Graduates

Backing up Judge Drymalski's statement is the violation repeater rate among graduates of the school. Fewer than 1 per cent of those who attend the school return to traffic court as violators. Studies in cities without driver improvement classes indicate at least 15 to 20 per cent of first offenders return to court as repeaters.

Classes at the Driver Improvement School have recently branched out to serve Spanish and Polish speaking residents of Chicago. An all-Indian class also was graduated with a Miss Phyllis Fast Wolf taking top honors. Dr. Conrad has brought his traffic safety school to industry, churches and synagogues and high schools throughout the city and suburbs. Every employee of the Flick-Reedy Corporation in suburban Melrose Park participated in the driver improvement course. In 1956 this safety conscious company received a first place award from the National Safety Council for its record of nearly a million man-hours worked without a lost-time accident. In 1957 the firm was again free of lost-time mishaps and was presented a safety award from its insurance group.

Indonesian delegation of traffic safety officials visits the school to receive instruction in establishing a similar operation in their country. Scores of U. S. and foreign cities have copied the plan of Chicago's driver training program.

Copelin

Insurance Companies Play a Major Role

Dr. Conrad stresses that much of the credit for the school's success should go to the many interested community organizations which backed it from the start. Insurance companies, in a joint effort with various civic, religious, fraternal and governmental bodies, outfitted the school with the most modern of training equipment. The Chicago Police Department was quick to offer several members of its force to serve as instructors. All of these groups are today reaping the fruits of their interest.

As Dr. Conrad sought advice four years ago, traffic officials from hundreds of cities and many foreign countries are coming to Conrad for help in establishing driver training schools. The American Bar Association last year motivated a swarm of requests for Conrad's counsel when the association saluted the school as the "finest of its kind in the United States."

Driver training instruction is by no means an exclusive Chicago success. Many cities have programs which are equally effective. The Municipal Court of Denver operates a driver improvement school, under the direction of Judge Sherman G. Finesilver, that is also considered one of the finest in its field. The Denver school, unlike Chicago's program, has no operating budget. The director, instructors and clerical staff all volunteer their services. San Diego, St. Louis, Dallas and Des Moines, among scores of other cities, have been recognized for their outstanding work in driver education.

The National Safety Council considers the creation of these traffic court driver improvement schools as one of the best things that has happened to traffic safety in years. The insurance industry wholeheartedly agrees. ⊙

LET THE SELLER BEWARE

Oily feed proved a costly mishap

Harmful products are creating some serious liability hazards for businessmen.

DURING THE WINTER OF 1952, whole herds of cattle in the Midwest sickened and died of a mysterious malady.

Veterinarians thought at first it was a vitamin deficiency disease, but eventually they discovered the cattle were being poisoned by contaminated pellets of cottonseed meal, which they traced to a Texas feed mill. An investigation soon revealed the source of the trouble. Mill operators had bought a specially-prepared oil to lubricate the machinery, and had failed to notice it seeping into the feed until 6,800 tons of pellets had been made and sold to cattlemen. The feed mill and the oil company that supplied the lethal lubricant had to pay out more than $10 million in damages.

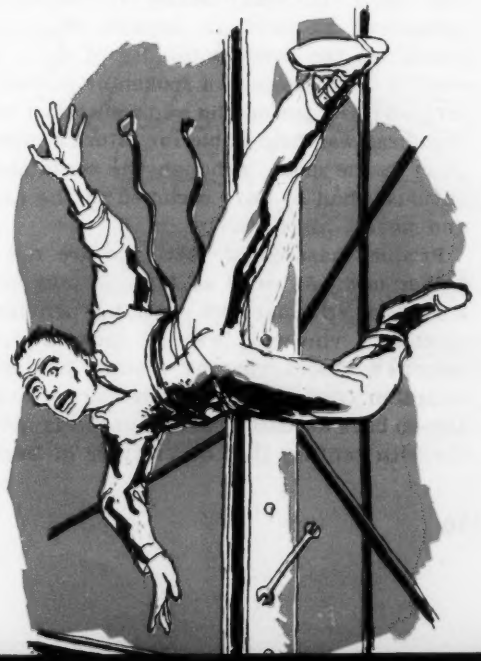
This incident is more than an industrial "whodunit." It also indicates a significant trend: Business firms increasingly are being held liable for damages resulting from the use of their products and services. Legislatures, courts and public opinion have all favored greater protection for the customer in recent years—so much so that the ancient warning of "buyer beware" needs to be revised to include the seller, manufacturer and contractor as well.

Practically everything made or sold can now land a businessman in court, including such seemingly innocent merchandise as stove polish, cement, and nuts and bolts. In one recent case, a workman slipped while working high above the ground on a derrick and fell to his death when the metal ring on his safety belt gave way under the sudden jolt. A California court upheld a $79,000 verdict against the firm that made the defective ring.

Persons who sue for product damages usually must prove negligence, though the degree of carelessness often need not be substantial. The Supreme Court of Missouri upheld a verdict against a paint manufacturer, for example, because he failed to warn a customer to keep the paint out of his son's eyes. The customer's 12-year-old boy accidentally poked his face into a dripping paint brush while helping his father, and lost the sight of his right eye. Although the paint manufacturer argued in court that he could not have foreseen such an incident, he was held liable and had to pay.

Sometimes the mere fact that a mishap occurred is accepted by the courts as sufficient evidence that negligence was involved. A classic

A trusted belt-ring failed him



For the glass, the grocer paid

Let the Seller Beware

statement of this principle came from a Mississippi jurist who found a tobacco manufacturer guilty of negligence after a portion of human toe was found in one of his packages of chewing tobacco. Said the judge, "We can imagine no reason why, with ordinary care, human toes could not be left out of chewing tobacco, and if toes are found in chewing tobacco, it seems to us that somebody has been very careless."

Even when negligence cannot be demonstrated, businessmen whose products cause harm may still be vulnerable to lawsuits charging breach of contract. Written guarantees, advertisements and statements made by salesmen have all been held to constitute a "contract" between buyer and seller. In many states, businessmen are considered to have an implied obligation to guarantee the merchantability of their goods, even in the absence of a spoken or written warranty. Thus a grocer who sold a customer canned crabmeat was held liable for injuries caused by glass in the meat, although the contamination obviously had to have occurred at the cannery and not at his store.

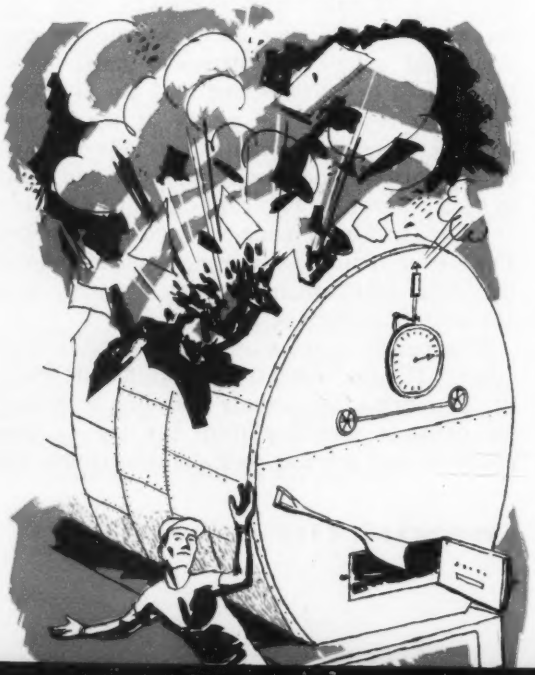
Product hazards of this type are not altogether new. As early as 1266, Britain enacted a series of criminal laws providing penalties for victualers, vintners, brewers, cooks and other persons who sold "corrupt" food for human consumption. Civil suits against vendors of bad food also go back at least to 1431. But it was not until the 20th century that other types of businessmen began to be sued in large numbers for product damages, and the big upsurge has come only in the past 20 years.

Product-damage suits have kept pace with the nationwide rise in auto-accident claims and personal-injury litigation of all kinds, with juries increasingly inclined to award higher and higher judgments to the claimants. Nor is there much likelihood that the trend will be reversed. Americans now expose themselves to a fantastic array of products, from detergents and home permanents to automobiles, aqualungs, air conditioners and atomic isotopes. Some of these products are bound to cause damage occasionally, even when properly made, and a defective batch could easily bankrupt its manufacturer and vendor.

Fortunately, businessmen have been able to protect themselves against most such hazards by purchasing what is called product liability insurance. This coverage was first offered in 1910 to bakeries, restaurants and other food handlers, and has since been extended to include virtually all types of enterprises.

As a general rule, product liability insurance is designed to protect a company against all the accidental damages its products may cause after they have been sold. It is not intended to cover damage to the product itself, nor to guarantee that the product will perform as advertised. These are considered ordinary business risks. Thus if a steam boiler fails to heat properly, it would be the manufacturer's responsibility to have it repaired or replaced. If the boiler is defective and explodes, the manufac-

A defect that became a liability



An oversight and a $6,000 flood

turer's insurance company would pay for any injuries or damages that result, but not for the cost of replacing the boiler itself.

One unusual application of product liability insurance is called completed operations coverage, sold to contractors, plumbers, electricians, installers and repairmen to pay for damages resulting from defective workmanship. A recent example involved a plumber who installed the water system for a public building in Washington. He failed to notice that one of the valves was not working, and the entire first floor was flooded. The contractor's insurer paid $6,000 to have the mess cleaned up. It is now quite common for municipalities, exhibit halls, manufacturers, building managements and other large property owners to require firms doing work on their premises to carry $1 million or more in liability coverages.

An estimated 70 to 80 per cent of all firms now carry product insurance as part of their public liability coverage, along with the usual insurance against falls and other mishaps involving customers. A manufacturer or wholesaler may also protect his retailers by including them on his product insurance policy.

Some businesses and products are inherently more risky than others, of course, and this difference is reflected in the rates charged for product insurance. A department store with $500,000 in annual sales, for example, would pay about $35 a year for a product liability policy providing $150,000 worth of coverage against both bodily injuries and property damage. But a firm that does $500,000 worth of business installing gas, electric or oil heaters would pay $5,424 for the same amount of protection.

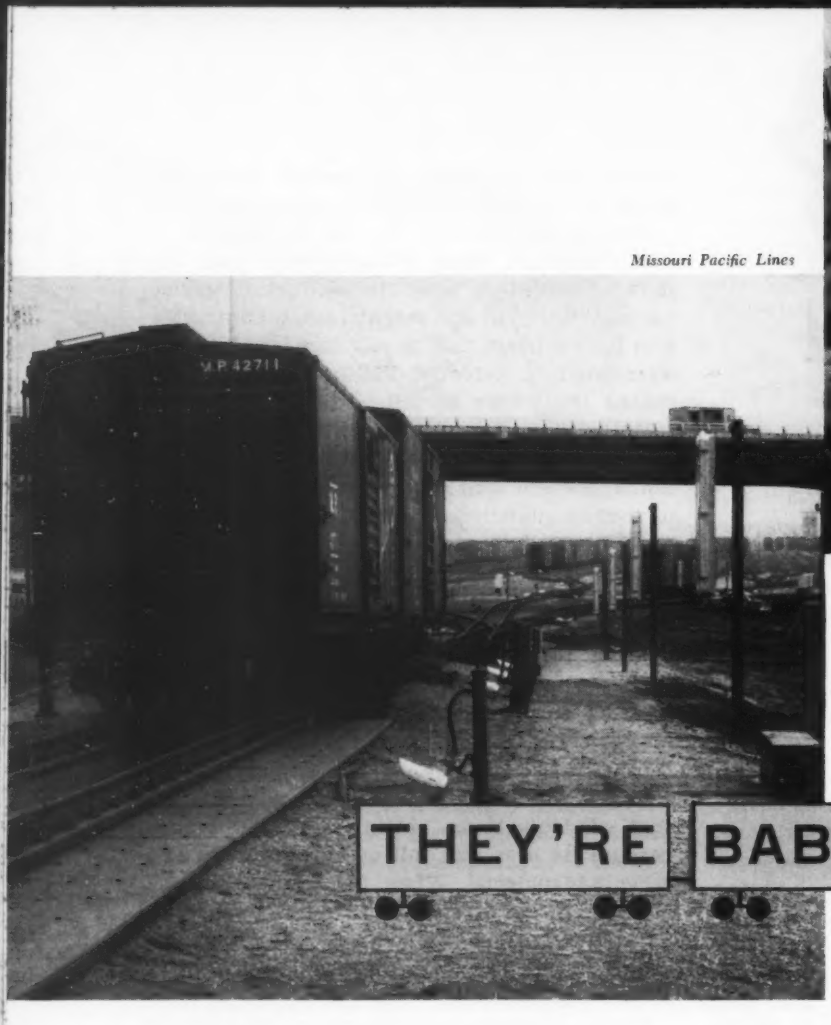
Judging the amount of risk involved is a tricky problem, since latent defects may not show up until long after the product or service has been sold. In one recent case, a contractor who built a porch had to pay damages 20 years later when a defective railing collapsed and caused the owner to fall and injure himself.

Mutual insurance companies that write products insurance usually investigate the reputation of the firm and its products before agreeing to assume liability for them. If the firm is having trouble, the insurer tries to find out why and suggest a remedy. One mutual company's engineers have suggested magnets on conveyors to keep bits of metal out of candy bars, backlighting to reveal foreign substances in pop bottles, shorter hours for quality control inspectors to increase their alertness, and an improved delivery system for bakeries to reduce the hazard of spoilage.

Their most celebrated case involved a brewery that suddenly began getting a rash of claims because its beer was full of buttons, bugs and other odd objects. When insurance engineers couldn't find anything mechanically wrong, they hired detectives to work in the plant who soon caught two ex-convicts hired by a competitor to sabotage the beer.

Not all insurance services are as dramatic as this, but the protection that products insurance affords is rapidly becoming a necessity in a society that now says: Let the seller beware. ⊙

Insurance caught these saboteurs



Missouri Pacific Lines

Handled almost gingerly, as many as 3,600 freight cars a day can be switched over the electronic hump (left) equipped with a precisely controlled car retarder to assure safe, normal impact without cargo damage when cars couple onto string in the yards. Operator in tower (above) handles the switching controls and train make-up.

THEY'RE BABYING THOSE F

But the toll in freight lost and damaged is still $115 million a year.

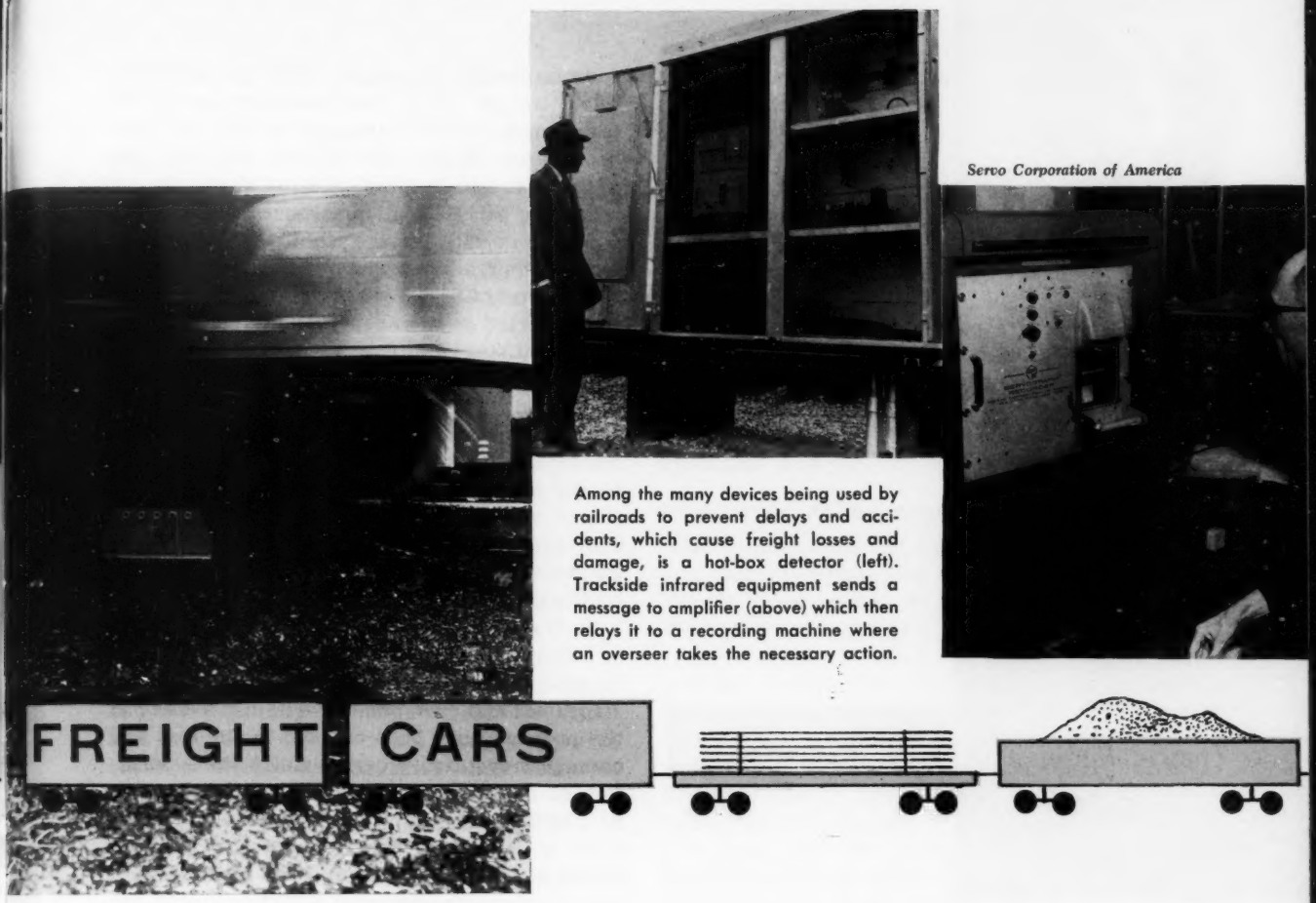
NEXT TIME YOU SEE a bruised banana you may be looking at the epitome of a problem that is costing the nation's railroads—and the country—$115,618,244 a year by 1959 figures.

In fact, the railroads' freight loss and damage toll in 1959 included just such items as a monthly total of 50,000 pounds of damaged refrigerator-car bananas in one market alone.

Now a new and corrective method devised by the Freight Loss and Damage Prevention Section of the Association of American Railroads is being used experimentally to load bananas. If that doesn't solve the damage problem, other preventive measures will be taken. Whether in bananas or guided missiles, every dollar's worth of the millions in freight loss and damage is being attacked with a marshaling of research, education and shipper-receiver assistance.

This is a concerted effort by railroads to reduce the heavy drain on their already small net revenues, retain their share of the shipping business, improve their insurance position, please their shipper-customers and, in fact, safeguard their very existence.

Criticalness of the problem is emphasized in this statement by C. D. Buford, vice president, Operations and Maintenance Department, of the



Servo Corporation of America

Among the many devices being used by railroads to prevent delays and accidents, which cause freight losses and damage, is a hot-box detector (left). Trackside infrared equipment sends a message to amplifier (above) which then relays it to a recording machine where an overseer takes the necessary action.

Association of American Railroads: "The mounting urgency for reduction and elimination of loss and damage, as well as the development of improved transportation techniques, was never greater than today."

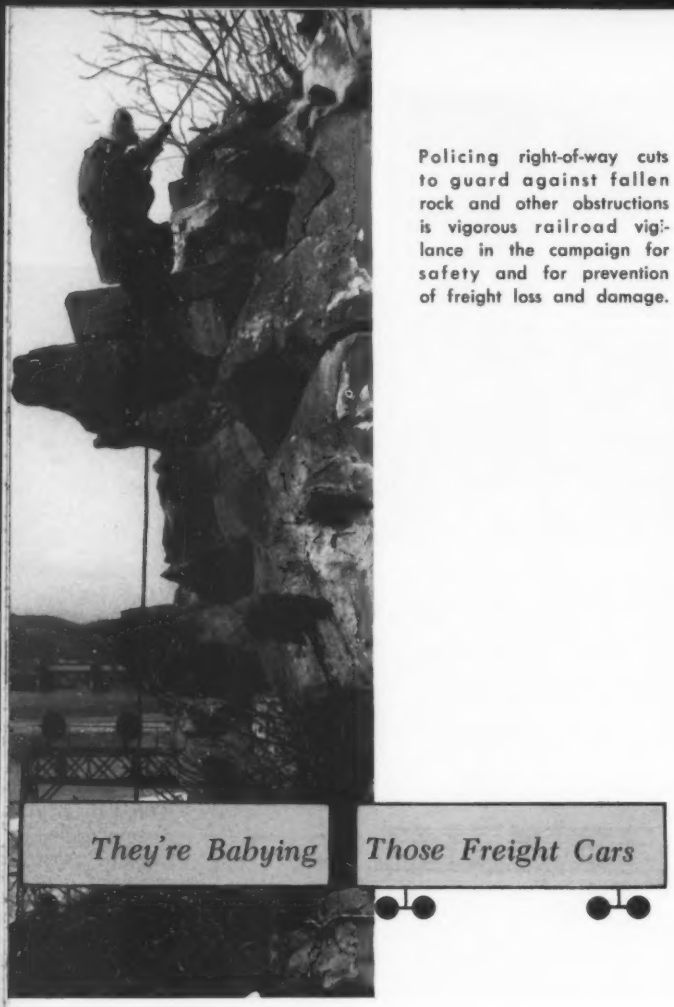
In the railroad industry, which earns less than 3 per cent, about 1 per cent of gross revenue is spent to cover freight loss and damage.

What concerns railroads most is how to enlist full co-operation of the other segments of the nation's industry and commerce that have a stake in the problem—manufacturers, the packaging industry, shippers, forwarders and even the receivers.

Despite all that the railroads have been able to do, the 1959 loss and damage total of $115 million for 100 carriers representing 95 per cent of the U. S., Canadian and Mexican mileage was an increase of 1.31 per cent over the $114,119,422 reported for 1958. The 3,025,908 new claims presented to railroads in 1959 was only a slight decrease from the 1958 total.

From automobiles to watermelons, 42 different commodities or commodity groups were included in the 1959 listing of total freight loss and damage. Of the itemized commodities, grain had the largest single debit with almost $9 million representing 7.8 per cent of the total.

Whatever the commodity, the railroads are dealing with some elusive and unmanageable factors outside their own ranks in their campaign to reduce the toll. More than half of the losses, or 56 per cent, were classified as unlocated damage, i.e., cause unknown. Packaged freight accounted for 40.1 per cent of the total and that not in packages, 15.8 per cent. In contrast, a measure of the railroads' direct blame for loss and damage was that only 8.5 per cent of the



Policing right-of-way cuts to guard against fallen rock and other obstructions is vigorous railroad vigilance in the campaign for safety and for prevention of freight loss and damage.

Pennsylvania Railroad Company

total was caused by train accidents; 3.4 per cent by improper handling in trains, yards or stations; 4.3 per cent by defective or unfit equipment; and 10.6 per cent by error of employees.

Contrary to what might be supposed, railroads' expedited schedules are not to blame. Under these faster schedules, trains cannot be taken into the yards at all the terminals and switched from end to end every 200 or 300 miles. With less switching, there is less loss and damage.

No one ally is more vitally concerned with helping railroads reduce loss and damage than the insurance industry. It has a three-way stake in the protection of the value of life and property as applied to the railroads' problem. First, the fundamental purpose of mutual insurance is to reduce losses and thereby reduce the cost of insurance. Therein mutual insurance has common purpose with the railroads. Their freight rates, like insurance premiums, must cover loss and damage as well as other necessities. Hence, the greater the loss and damage, the higher the rates must be.

Second, the stake of insurance companies in freight loss and damage claims can be judged from the premiums paid by the railroads. In 1958 a total of $8,585,858 in insurance premiums was reported as a transportation operating expense by Class I railroads. Insurance protection for such middlemen as freight forwarders is an additional item.

Third, as investors in railroad bonds and stocks, the insurance companies are co-owners in the business along with all other investors. Hence, whatever hurts the railroads also hurts the insurance industry. Life insurance companies of the U. S. have almost $4 billion of their assets invested in railroad bonds.

A single mutual insurance company in the property and casualty field has $13 million of its $582 million investments in railroad bonds.

Insurers and everyone else who has a stake in the problem have been enlisted in the loss and damage prevention program which the Association of American Railroads has launched from its Chicago headquarters. Director of the program is C. A. Naffziger, serving with a committee of 37 representatives from railroads and other groups. On Director Naffziger's staff are four special representatives and four commodity specialists, one each for ceramics, furniture, canned goods and grain. Also under Director Naffziger is a freight loading and container bureau. It has a research staff and five district offices in various parts of the U. S.

Freight loss and damage at the rate of about $215 a minute impose a fast pace on Director Naffziger and his staff. Their annual report of 1959 showed such feats as 3,464 conferences with executives and traffic officers, 1,064 inspections of shipping containers at various scattered locations and 1,529 cars examined at origin.

United Cooperation Would Reduce Losses

What encourages—and challenges—Director Naffziger's staff is that perfect shipping is possible if shippers, packers and others will cooperate. Of the millions of shipments transported each year, the vast majority go through unblemished and are delivered in fine condition to perform useful service. It has even been proved that such new and sensitive commodities

as jet engines and Minuteman guided missiles can be perfectly shipped.

In cases where losses have been occurring in the past, the AAR's perfect shipping program has demonstrated how damage can be greatly reduced, if not eliminated. Director Naffziger has reports of how one industry, shipping canned milk, has reduced its per car claim payments from $41 to $2.73 over a period of about five years.

Such results are achieved through the adoption of the 10-point team play program by all parties concerned—the shipper who ordinarily packs and prepares the article for shipment and loads it into a car furnished by the carrier; the carrier who moves the car to destination; and the consignee who unloads the freight.

Innovations such as powerful vacuum machines for cleaning the inside of cars are an example of what the railroads are doing at the car supply end to fulfill their part of the 10-step perfect shipping program. Innovations also are being made in the careful handling of trains and cars. Purchase of new cars and the repair and rebuilding of others are being pushed by many carriers consistent with their resources for doing so. The vacuum cleaning of cars is not the end; new and improved car cleaning techniques are continually being studied.

Careful handling of cars once the freight is loaded and on its way no longer is left entirely to human judgment and trainmen's hands, though crewmen and yardmen are still most important. In some yards the characteristics of the car itself, including its weight and rollability, plus other factors such as the weather, are all electronically computed to adjust the action of automatic retarders and insure safe and careful coupling. Regardless of the type of yard operation, an intensive campaign has been waged for normal coupling impacts of less than four miles an hour. Impact recorders installed in test cars of freight have played an important role in this campaign by showing when and where overspeed impacts occur and by providing clues to what or who may be at fault—the track, the car, the engine, the engineman or the trainmen. In numerous instances engines, cars and yard conditions have been carefully analyzed and corrective action has been taken as a result of these impact studies. In some cases employees have been taken out of service because of their laxity resulting in overspeed impacts.

Freight cars, reminiscent of what has happened to automobile styles, have been improved markedly with higher capacity, longer travel draft gears, more cushioned underframes and other refinements to overcome the impact problem. Tremendous strides have been made, for example, in increasing the shock-absorbing capacities of draft gears.

Hot boxes, which are related to the damage problem and to delays and derailments through journal failures, are now being detected by means of electronic equipment installed in the track bed. In 1958 the railroads had a hot box "set out" of a car for every 200,000 miles of operation, a 10 per cent improvement over 1957.

Loading and Packing Improved in Research

Research problems directly related to the loss and damage problem are the special business of the container and loading research division of the AAR Research Center.

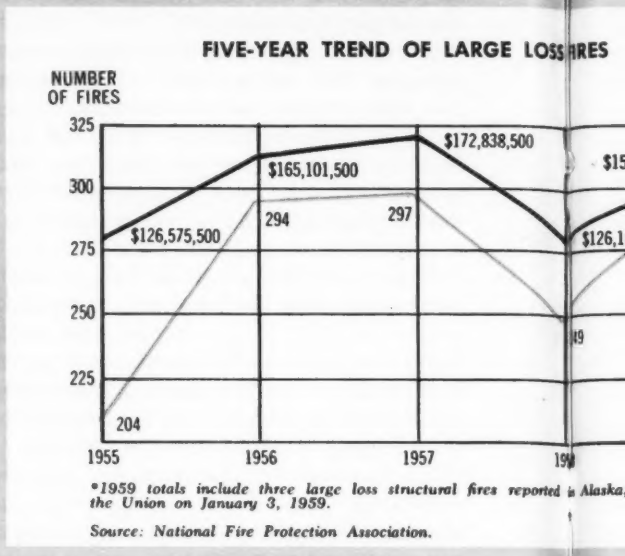
As one example, there has been developed a new flat sandwich arrangement for loading automobile laminated windshield glass. With this arrangement, more than 100 heavy impacts failed to damage the glass as compared with breakage from a single impact under the prevailing packing method.

In education and supervision, as in research, the railroads have attacked the loss and damage problem at all levels. As one official said, "We hold regular meetings with employees who handle cars. We use motion pictures and personal contacts. We have speed demonstrations. We print special reminders in our timetables and in other places. We handle specific instances of rough handling with the responsible crews. We post pictures of damaged cars. We use impact recorders. We have monthly reports of damage in yards. We summarize results of impact recorder tests."

There are still those losses from theft, delays and shipper-receiver causes. As Director Naffziger emphasizes, the perfect shipping story must continue to be taken to the men and women who are actually handling the freight. It is to them that the basic causes for loss and damage finally trace down. It is there that the causes must be corrected and prevented.

If Director Naffziger could have the ultimate in loss and damage prevention, it would be a built-in voice box on every piece of freight saying to every handler along the way, "I am your livelihood—handle me carefully." ⊙

MORE BIG FIRES, HIGHER LOSSES



*1959 totals include three large loss structural fires reported in Alaska the Union on January 3, 1959.

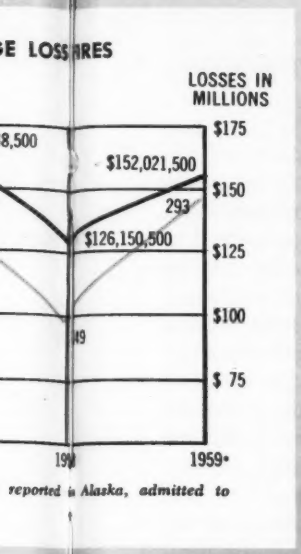
Source: National Fire Protection Association.

"LARGE LOSS" STRUCTURAL FIRES, those involving property damage in excess of $250,000, climbed sharply during 1959. The National Fire Protection Association's survey of 49 U. S. states found that there were 293 large loss structural fires involving total property damage of more than $152 million. In 1958 there were 249 such fires involving a loss of $126 million.

Industrial fires, always the leader in the large loss category, accounted for more than a third of such fires during 1959, as shown in the accompanying charts. Increases were also recorded in the number and cost of fires in stores, warehouses, residences and institutions, and churches.

In addition to boosting fire insurance rates, large loss fires often cause business interruption, unemployment and, in small communities, localized business recessions. Fire fighters, insurance officials and fire protection engineers are working together to promote use of equipment, reporting systems and building cutoffs that will reduce the staggering cost of large loss structural fires.

One of 293 large loss building fires reported in U.S. in 1959, this blaze in a Tacoma, Washington, plywood mill accounted for damage of more than $1 million.



reported in Alaska, admitted to

NUMBER OF LARGE LOSS STRUCTURAL FIRES	TYPES OF STRUCTURES	PROPERTY DAMAGE
INDUSTRIAL		
72	1955	[illegible]
103	1956	$69,355,000
115	1957	$82,866,000
81	1958	$50,645,000
102	1959	$52,510,000
MERCANTILE		
47	1955	$24,424,000
49	1956	$22,775,000
55	1957	$24,410,000
69	1958	$31,846,000
81	1959	$34,553,000
WAREHOUSES		
37	1955	$16,346,000
47	1956	$28,901,000
48	1957	$24,865,000
38	1958	$18,735,000
41	1959	$30,098,500
SCHOOLS		
8	1955	$2,200,000
20	1956	$8,713,500
18	1957	$7,199,500
16	1958	$6,281,000
15	1959	$6,039,500
RESIDENCES AND INSTITUTIONS		
6	1955	$2,094,000
20	1956	$10,434,000
10	1957	$5,380,500
6	1958	$2,289,500
14	1959	$6,913,500
CHURCHES		
5	1955	$1,780,500
14	1956	$9,787,000
12	1957	$4,709,500
4	1958	$1,166,000
6	1959	$1,833,000
OTHERS		
29	1955	$8,967,000
41	1956	$15,136,000
46	1957	$24,408,000
35	1958	$15,188,000
34	1959	$20,074,000

United Press International

Chicago Sun-Times

Sir Edmund Hillary, conqueror of Mount Everest, views drawing of the Abominable Snowman. Hillary will lead a scientific expedition up the Himalayan mountains in Nepal where some time will be spent Snowman hunting.

THEY'RE OFF FOR SCIENCE AND THE SNOWMAN

Hillary expedition, backed by $200,000 and insurance, starts its Himalayan trek.

HISTORY IS FULL of mythical creatures whose existence has never been proved or disproved. Scotland's Loch Ness Monster, for instance, has reportedly been seen by thousands, but science is still seeking confirmation.

At last, proof or disproof of one such famous creature, the Abominable Snowman of the Himalayas, may be forthcoming. In an effort to oblige the scientists and solve this international mystery once and for all, Sir Edmund Hillary and his scientific and mountaineering expedition this month will leave Katmandu, Nepal, in the valley of the Himalayas, in quest of the Snowman.

Described as a big, hairy beast which strolls above the snow line, the Snowman is the most celebrated of the current crop of legendary creatures. Tales of the Yeti, as Himalayan shepherds call it, have been told for 75 years. Not until 1951, however, when Explorer Eric Shipton brought back photographs of what were assumed to be Yeti tracks, was any concrete evidence offered.

Although plans to capture the Snowman have received the bulk of publicity, the expedition's primary objective is to conduct an extensive program of physiological research into acclimatization of the human body to extreme altitudes. This test will be carried out by a party of men who plan to spend the entire winter in the Himalayas at a height of 20,000 feet and then attempt to climb Mount Makalu's 27,790 foot peak without the benefit of supplementary oxygen.

Sponsored by the National Geographic Society and Field Enterprises Educational Corporation at a cost of $200,000, the expedition party includes a 14-man team of heavily insured physiologists, meteorologists, glaciologists, zoologists and veteran mountain climbers. Their equipment will be transported to the camp by a caravan of 630 coolies, each toting a 60-pound pack on his back. Getting the necessary food, fuel and sheltering facilities to the camp sites will be the most difficult and time-consuming problem.

Dr. Griffiths Pugh, physiologist and a member of the 1953 British Everest expedition, will serve as senior scientist. His job will be to

bring back information regarding the adaptation of the human body to high altitudes. During the nine-month experiment, six climbers, including Hillary, will go through a carefully controlled program of acclimatization in an effort to determine the maximum height at which man can live for long periods of time without serious mental or physical deterioration.

Camps will be established at 18,000 and 20,000 feet. The men will be housed in a plywood and plastic cylinder-shaped building for several months as human guinea pigs, with each man tested regularly. If he shows signs of weakening, he will be taken to a lower altitude to recover. Modern methods and equipment will be used, including a telemetering system which can broadcast information on the climber's pulse and breathing rates back to scientists at a lower level.

Hillary described some of the physical effects encountered in mountain climbing to prove to volunteers that the expedition will not parallel a picnic. A climber first notices a change in his breathing between 10,000 and 14,000 feet. This is called Cheyne-Stokes respiration (after Drs. Cheyne and Stokes, British physicians). It is a series of short inhalations, a long breath, and then a period during which the lungs become inactive. This grows greater as the height increases. On the descent, Hillary said, a climber's breathing becomes completely disorganized, with no normal rhythm.

During the months of January and February the expedition party will concentrate its work on glaciology. A deep excavation will be made in the Barun Plateau to examine annual layerings, temperatures and crystalline forms and to take snow samples. Meteorological records will also be kept of winter temperatures, wind velocities and snowfall at 20,000 feet.

Close examination of a portion of the radiation equipment which will be used for experiments is made by Lady Louise Hillary, wife of the famous climber. Lady Hillary plans to remain at home in New Zealand, much nearer sea level.

Field Enterprises Educational Corporation

Hillary, John Hunt and Tenzing Norgay, all members of the successful Everest expedition of 1953, discuss their past adventure behind scale model of the world's highest peak.

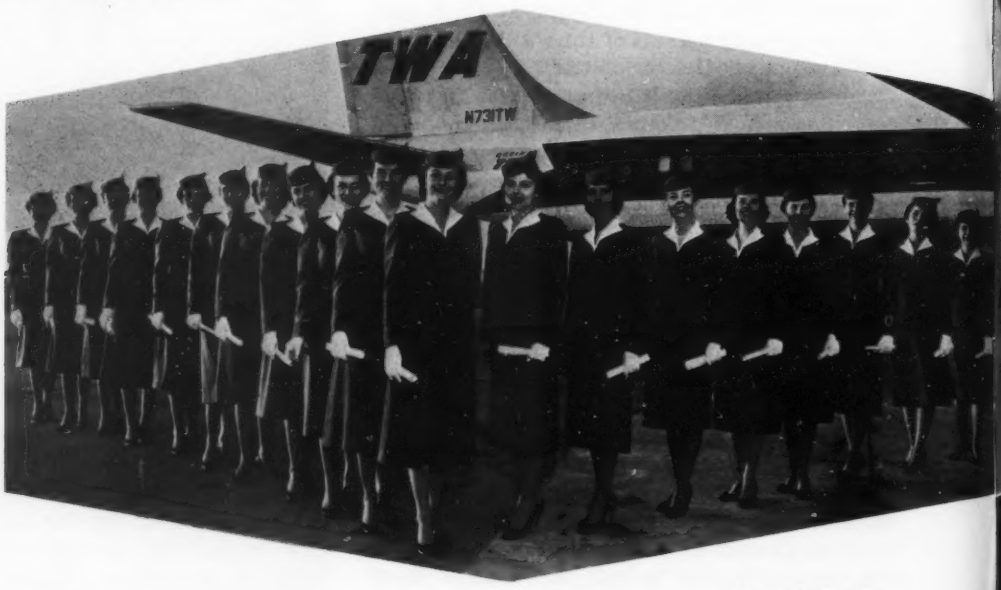
A search for the legendary Snowman will be conducted, along with the scientific experiments, during the first four months of the expedition. R. Marlin Perkins, eminent American zoologist and director of Chicago's Lincoln Park Zoo, will be in charge of the hunt. An air gun, accurate within 100 yards, will be used to fire a drug-filled hypodermic syringe into the creature to quiet it if and when a capture is possible.

Belief in the Yeti's existence stems from verbal descriptions and Shipton's controversial photos. Shipton, a British explorer who will accompany Hillary to Mount Makalu, took the photographs in 1951 while on an Everest expedition. The tracks indicate a creature of great weight which walks upright on its hind legs. These photos have been explained by some scientists as a deformation of the actual size through a melting of the snow along the tracks' edges, greatly enlarging them.

Expedition members feel that the slightest possibility that there is a mammal, not yet known to science, living in these high altitudes, is one that should not be overlooked. The okapi, for instance, was first seen by pygmies in the Congo jungles. They described the strange animal as being somewhat like a giraffe, but with purplish and cream colored stripes around its hind legs. The pygmies were scoffed at until 1900 when an okapi finally was captured. Today the animal is pictured in Webster's Unabridged Dictionary.

By next June, Hillary's expedition will complete its experiments, exploration and mapping and start back down the mountain. With or without the Yeti, there is certain to be a wealth of scientific data in their packs. ⊙

STEWARDESSES DO MORE THAN SMILE



Trans World Airlines

Able and attractive, these graduates of TWA's hostess training center in Kansas City are prepared for duty aboard jets. Behind them is a $5 million Boeing 707.

ON AN INTERNATIONAL FLIGHT from Los Angeles to Paris in 1958 scores of passengers on a giant airliner were terrified when one engine caught fire as the plane flew over Cutbank, Montana. All but one of the passengers remained calm and followed the stewardess's instructions about preparations for an emergency landing. The exception was a panic-stricken man who pulled out some of his hair and beat his head against a seat.

The stewardess restored his calm by assigning him the job of closing window curtains so that other passengers would not be frightened by the flames. As the plane landed, the same high-strung passenger panicked once more and threw himself into the aisle, blocking the exit.

Again the stewardess was equal to the situation. She persuaded him to leave the cabin and hold the emergency exit chute for others.

A major air disaster was thereby averted because a resourceful stewardess remembered a training school lesson in applied psychology: that panic-stricken passengers may be quieted if their minds are diverted during emergencies.

The remarkable story of the Cutbank evacuation is one of hundreds of incidents documented in the files of the Civil Aeronautics Board which prove that stewardesses are much more than airborne waitresses. Intensive training at campus-like schools operated by major U. S. airlines has taught air hostesses to be amateur psychiatrists, midwives, policewomen, fire fighters and accident prevention engineers. These skills enable the charming young women to make air trips both safe and comfortable.

To the credit of well-trained stewardesses, a feeling of security is enjoyed by those who use commercial airlines. This attitude is proved by a recent study of businessmen's travel practices made by the National Industrial Conference Board which reveals that a majority of firms impose no group-travel restrictions on top executives. Instead of insuring traveling executives with expensive air trip policies, business firms now allow them to travel under insurance coverage provided by workmen's compensation and other comprehensive insurance plans.

One of the most elaborate stewardess training centers is that of American Airlines on a wooded

Food preparation and service are part of training for 1,400 stewardesses who fly on American Airlines' 70-city network. Practice is done on cabin-size galleys.
American Airlines

They are trained, too, for the serious business of safeguarding passengers and the aircraft.

Serious Study by TWA hostess candidates prepares them for safeguarding lives of passengers. Safety is stressed in all courses offered by major U.S. airlines.
Trans World Airlines

Though stewardesses are not trained to fly airplanes, they are taught to use intercom systems and safety equipment. They learn air navigation, meteorology.
American Airlines

Aircraft maintenance instruction helps stewardesses answer passengers' queries and to recognize and report mechanical failures visible from the plane cabin.
American Airlines

United Air Lines

Under construction near Mt. Prospect, Illinois, this "jet age university" will train 700 United Air Lines stewardesses annually. Center will cost $2 million.

American Airlines

Country club atmosphere of American's training center in Fort Worth is one of lures used to get stewardess recruits.

Stewardesses Do More Than Smile

22-acre tract near Amon Carter airport, Fort Worth, Texas. Here American can train as many as 1,000 stewardesses each year, but enrollment is based on the need for personnel.

Former stewardesses and other experienced American Airlines' employees conduct a six-week course of study that includes classes in air navigation, meteorology, history and theory of flight, maintenance, reservations and ticketing, public relations, first aid and infant care, food procedures and good grooming.

Sessions are also devoted to applied psychology, which American calls "passenger conversation." For example, trainees learn that male passengers who try to become friendly with stewardesses should be asked about their wives, a tactic that embarrasses most wolves. They also learn to give special attention to first-time flyers, usually by engaging them in pleasant chatter that takes their minds off the flight.

Young women at American's "Stewardess College" are all between 20 and 26 years old, 5'3" and 5'8" tall. Each weighs no more than 135 pounds, has a high school diploma and probably some college training. They all have good eyesight and are attractive, single and physically fit.

Similar candidates take comparable training at centers operated by other airlines: Pan American in New York City and Miami; Braniff International Airways in Dallas; Capital in Washington, D. C.; Continental in Los Angeles; Eastern in Miami; Delta in Atlanta; Northwest in St. Paul, Minnesota, and Trans World Airlines in Kansas City.

United Air Lines, which trains its stewardesses in Cheyenne, Wyoming, was the first domestic airline to employ a stewardess, Mary Ellen Church, who served 12 passengers on a flight from Cheyenne to Oakland, California, on May 15, 1930. Miss Church was a registered nurse, as were all stewardesses until World War II took them to the battle lines.

So important is pre-flight training for jet age stewardesses that Rowland K. Quinn, Jr., president of the Air Lines Stewards and Stewardesses Association, recently recommended to a Congressional committee that training standards be set by the Federal Aviation Agency.

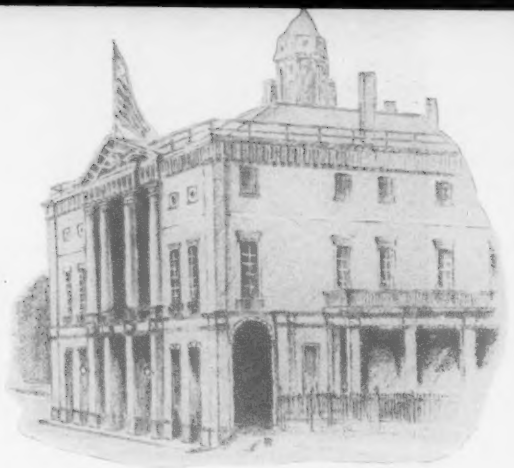
In spite of the investment made in training cabin personnel, officials of major airlines don't expect the average stewardess to stay on the job very long. Statistics compiled by American Airlines show that the average young woman flies for about 18 months. During this time she serves about 8,000 meals aloft, makes 4,500 take-offs and landings, sees 1,900 hours of air duty and 1,100 hours of service on the ground, walks 500 miles in airplane aisles, plays with 1,000 children, and between flights knits a supply of sweaters and socks and reads most best sellers.

When she leaves the airline, usually to be married to the boy back home, her resourcefulness and good training go with her to make people comfortable and happy ever after. ⊙

FROM OUR ANNALS

THE CONSTITUTION

September 17, 1787



Federal Hall, New York City, where the first Congress under new Constitution held sessions.

INSURANCE IN THE STRONGEST sense of the word was the objective of the Founding Fathers in the drafting of the Constitution of the United States which is now memorialized in Constitution Week, September 17 to 23.

Those able delegates meeting in the closed sessions of the Constitutional Convention 173 years ago this summer debated, drafted and redrafted the seven articles of the document to ensure a stronger government for the new nation than was vouchsafed by the loose association under the Articles of the Confederation. They underwrote the ensuring qualities of the Constitution with a preamble containing such purposeful verbs as *form, establish, insure, provide, promote* and *secure*. On five sheets of parchment measuring 28¾ by 23⅝ inches, climaxing the work of many men and many pens, they produced one of the nation's founding scriptures revered today as a model of co-operative statesmanship and the art of compromise.

At issue then were such major decisions as how much power to allow the central government, how many representatives in Congress to allot each state and how these representatives should be elected—whether by the people or by the state legislatures.

On September 17, 1787, agreement was reached and the completed document signed by members of the Convention representing 12 of the states. Then, having been submitted to the Continental Congress on September 20, the Constitution was prepared in printed form and submitted to the state legislatures. By June 21, 1788, conventions in the requisite nine states had ratified the Constitution, New Hampshire being the ninth to do so.

Formation of "a more perfect Union" was further ensured by appending a Bill of Rights demanded by opponents of the original Constitution as a safeguard for certain rights of citizens and for limitations on the power of the central government.

Along with the nation's other charter of freedom—the Declaration of Independence—the Constitution and the Bill of Rights are now enshrined in the National Archives in Washington where more than a half million Americans annually pay homage to them.

Security measures for the documents even include special filters of laminated glass in the shrine cases as a shield against ultraviolet rays. But there have been occasions when they were in jeopardy, notably when the British were advancing on Washington in August, 1814. The three documents along with other valuable records were stuffed into coarse linen sacks and transported in carts first to a building on the Virginia side of the Potomac and thence to Leesburg, Virginia, where they remained until after the British fleet had left Chesapeake Bay. During World War II—from December 26, 1941, to October 1, 1944—the Constitution and the Declaration were stored at Fort Knox, Kentucky.

Maximum security is provided today by a fireproof, bombproof vault constructed beneath the National Archives shrine to receive the three documents when they are not on display and in times of special danger.

In about one minute the encased documents with their supports can be lowered into the vault by means of an electrically operated mechanism. It also closes a massive lid after the documents have been lowered. In case of power failure, a stand-by mechanism will lower the documents and close the vault.

Thus in the finest traditions of insurance for protection and preservation of a precious heritage, the Constitution and its companion freedom charters are encased and guarded in what is probably the most impregnable strongbox in the Washington metropolitan area. ⊙

Found and raised, this sunken boat solved an $80,000 insurance plot.

UP FROM THE DEPTHS

ODD JOHN SOLNORDAL is spending his time behind bars rather than behind the wheel of his 78-foot boat, fishing off the coast of Washington, for two reasons. One is that he underestimated the ingenuity of insurance adjusters. The other is he had never heard of the Sea Scanar.

Solnordal, a 29-year-old Norwegian-born fisherman, decided one day that collecting the $80,000 insurance policy on his fishing vessel, the *Cape Douglas,* would ease many of his financial woes.

On December 28, 1958, the young skipper piloted his boat out into Puget Sound, just off the eastern shore of Vashon Island. That night he and his engineer, Kenneth Ness, paddled ashore in a rubber life boat. Solnordal reported to authorities that the good ship *Cape Douglas* had taken her last voyage. He explained that the boat struck what was apparently a submerged metallic object which tore into her hull, sinking the vessel in 650 feet of water.

Solnordal's insurance company wasn't completely satisfied with its client's story. A diver was engaged to probe the waters in the area where an oil slick and debris had been seen floating—some five miles from the spot where Solnordal said he abandoned ship. The oil slick had first been seen by an airplane pilot who reported it to the United States Coast Guard. But all clues failed, and the diver was unsuccessful in locating the sunken ship.

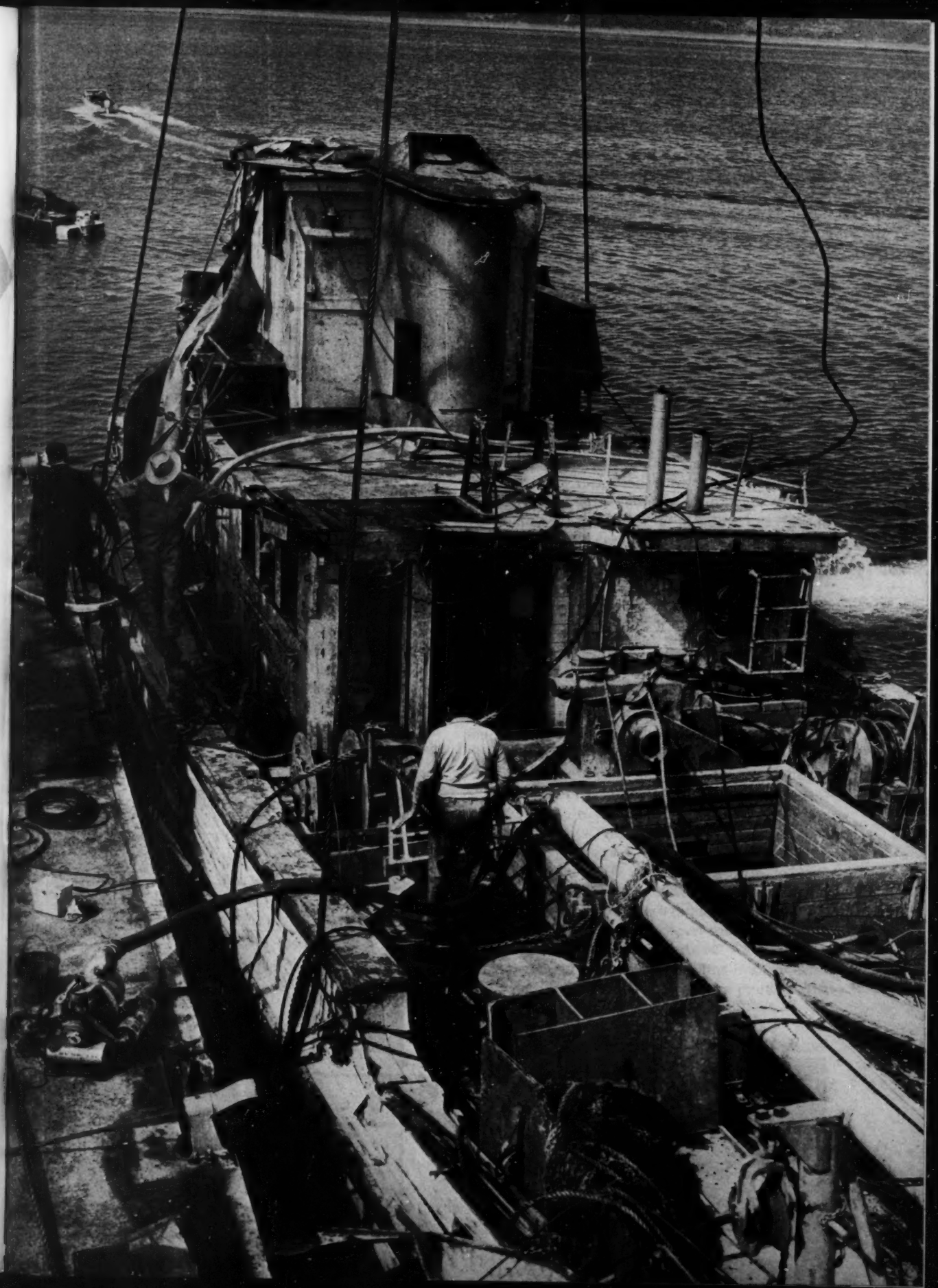
Then Minneapolis-Honeywell Regulator Company in Seattle, when apprised of the insurance company's plight, stated matter-of-factly that not only could it pin-point a sunken vessel, but also could determine whether or not the boat was the *Cape Douglas.* Minneapolis-Honeywell's newly developed Sea Scanar, a high-frequency sonar system which resembles radar but uses sound waves rather than radio waves, was placed into operation.

The Scanar, installed aboard the company's boat, *Neper,* left Seattle one July morning last year and within an hour had the *Cape Douglas* in focus. The technician operating the Scanar reported that the object on his screen was very definitely a boat constructed of wood and that she was standing upright on her keel at the ocean bottom. The technician also estimated the ship's size to be approximately the same as the *Cape Douglas.* A diving chamber this time

Technician operating Sea Scanar during search for *Cape Douglas* located the vessel with such accuracy that a diving chamber was lowered into the water and placed directly on her mast — 650 feet below.

Shortly after a barge-crane hoisted the fishing boat from her watery grave, insurance inspectors and law officials made a revealing investigation of her hull.

Seattle Post-Intelligencer



was lowered with such accuracy that it was placed directly on the submerged boat's mast.

The United States Salvage Company, under contract with the vessel's insurers, was called to the scene and, again under the guidance of the Scanar, was able to drop a heavy, looped cable into the water and lasso Solnordal's ship. For eight days the salvage boat eased the *Cape Douglas* upward and inward toward shore. At a depth of 90 feet, the vessel was firmly secured by divers to a huge crane-barge and lifted, at a total weight of 75 tons, from her grave.

Insurance investigators found the hull of the craft undamaged and all of her sea valves opened to let in water. When the valves of the *Cape Douglas* were sealed, the ship again became sea-worthy, with no water entering her hull. A few hours after the fishing boat was out of the water and the investigation completed, charges of barratry were lodged against Solnordal. He was accused of purposely sinking the boat to collect the insurance.

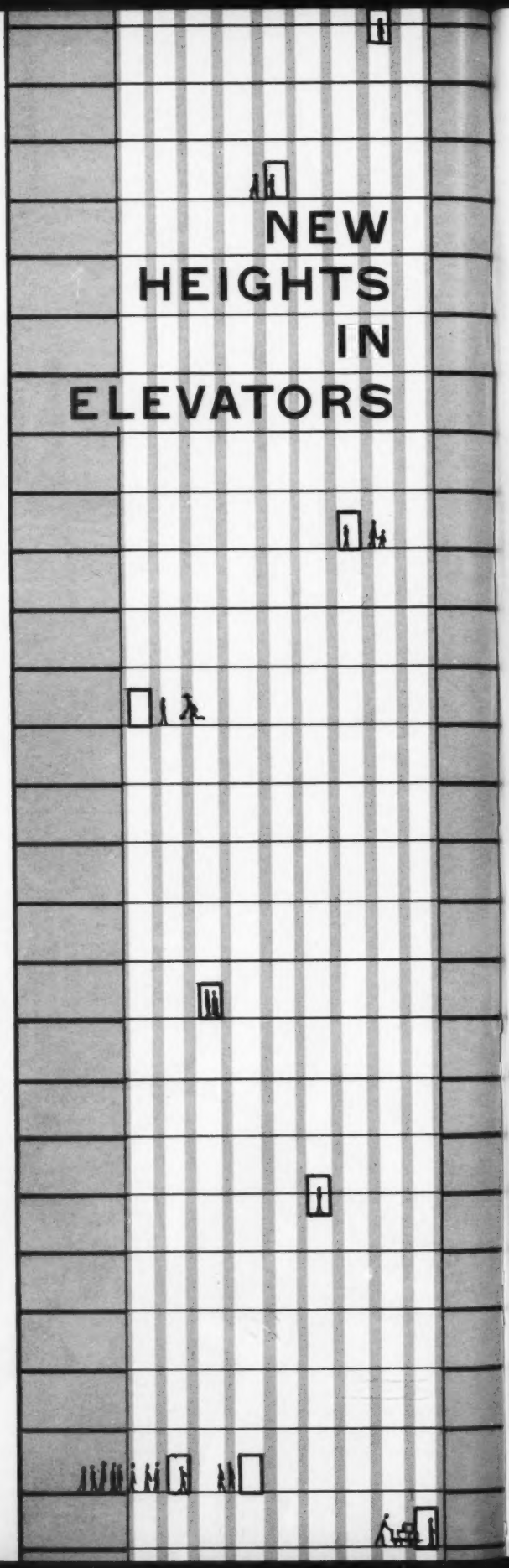
If the *Cape Douglas* had remained at the bottom of Puget Sound, Solnordal would undoubtedly be $80,000 richer today. As it turned out, however, the vessel's rescue brought forth several witnesses who had previously chosen to remain mum. The witnesses, shipmates of Solnordal, testified that their skipper had made offers ranging from $3,000 to $10,000 to them if they would quietly scuttle the 20-year-old fishing craft.

Although Solnordal firmly denied any conspiracy to sink the *Cape Douglas,* the court found him guilty of willfully sinking his ship and sentenced him to a five-year prison term. Instead of cashing in his financial woes, Solnordal was fined $3,000.

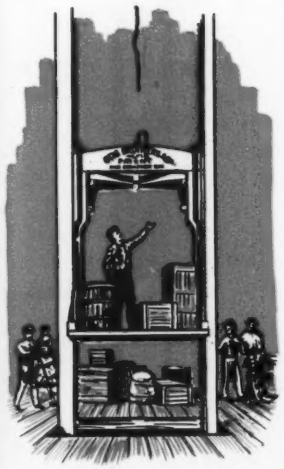
Minneapolis-Honeywell's Sea Scanar did what old salts, before the salvage operation, said was "impossible." In the future, the Scanar is certain to save millions of dollars in salvage for ship owners and underwriters. ⊙

Seattle Times

Odd John Solnordal, skipper of the *Cape Douglas,* didn't collect $80,000 insurance policy, but received a five-year prison sentence and $3,000 fine.



Present-day models are engineering marvels compared with their prototypes of September, 1853



IT WAS ON September 20, 1853—just 107 years ago this month—that Elisha G. Otis installed the first effective elevator safety device and sent the world's buildings skyward. His achievement turned a centuries-old novelty into an important means of modern transportation.

Otis found a way to prevent an elevator from falling, even if its hoist cables broke, by attaching spring-operated pawls on either side of an elevator platform that was raised between two uprights.

At a world's fair held that year in New York's Crystal Palace, Otis thrilled crowds by standing on the platform, having himself pulled upward to a dangerous height and unexpectedly cutting the hoist rope. Spectators gasped. But thanks to the pawls, which grasped the notched uprights, Otis always was saved, and the world had a structural principle on which its skyscrapers could be built.

Today the U. S. elevator industry can claim that it produces the safest means of public transportation. More than 200,000 elevators in this country carry 20 billion passengers each year a vertical distance in excess of 500 million miles. Yet the annual average of recorded accidents is below 1,000, fewer than 50 of them fatal. Elevators have, in fact, become virtually foolproof with today's automatic models.

Manufacturers of elevators must share the credit for safety with the nation's insurance companies, notably mutual casualty companies.

Insurance elevator inspection programs under public liability and workmen's compensation policies are so much a part of the industry that many states and municipalities rely solely on reports of private insurance inspectors to maintain public records on the condition of elevators. Many government units retain only supervisors who license insurance company inspectors and oversee their operations.

Mutual insurance has made another important contribution to elevator safety by participating actively in the drafting and revision of elevator construction and inspection codes approved by the American Standards Association. The first such code was drawn up by the American Society of Mechanical Engineers in 1921.

Only three years later, K. A. Colahan joined the elevator sectional committee as the representative of the National Association of Mutual Casualty Companies. He helped draft the first ASA elevator safety code published in 1925.

This code and subsequent revisions serve as models for manufacturers who wish to build their equipment to meet the highest standards of safety. Groups such as the National Safety Council recommend that the ASA code be adopted by state and city governments and suggest that purchasers of elevators demand that the devices meet ASA specifications.

Colahan, now retired as a division engineer for American Mutual Liability Insurance Co., has worked with his colleagues to square technical code requirements with practical experience. He resigned from ASA's sectional committee on elevator safety earlier this year saying, "Thirty-six years is long enough."

Today's "almost human" automatic models point up how rapidly elevators have improved since Otis made them safe in the middle of the last century. The contrast is especially dramatic when one remembers that crude elevators were apparently used by ancient civilizations, possibly even in the Biblical Tower of Babel.

The French builder Velayer is credited with building one of the first passenger elevators, a device called a "flying chair" that provided

a perilous ride by means of a counterweight. But it was not until Otis introduced his "wagon spring safety" that passenger lifts became a practical possibility.

Significantly, two insurance companies—New York Life and Equitable Life—were among the first firms in New York to use passenger elevators in their office buildings. That was in 1868 when Manhattan land values were climbing fast enough to make architects and builders interested in building upward to conserve land space.

Early passenger elevators were steam-driven and drum type, with hoist ropes wound and unwound from a drum to move the car up and down. As high-rise buildings were constructed, drum type elevators became obsolete because they could not accommodate great lengths of cable.

This problem was solved with a 1:1 gearless traction device with a sheave mounted directly on the armature shaft. A counterweight is used to take excess cable down the hoistway. By 1910, gearless traction electric elevators had come into general use because of their low cost, safety and efficiency.

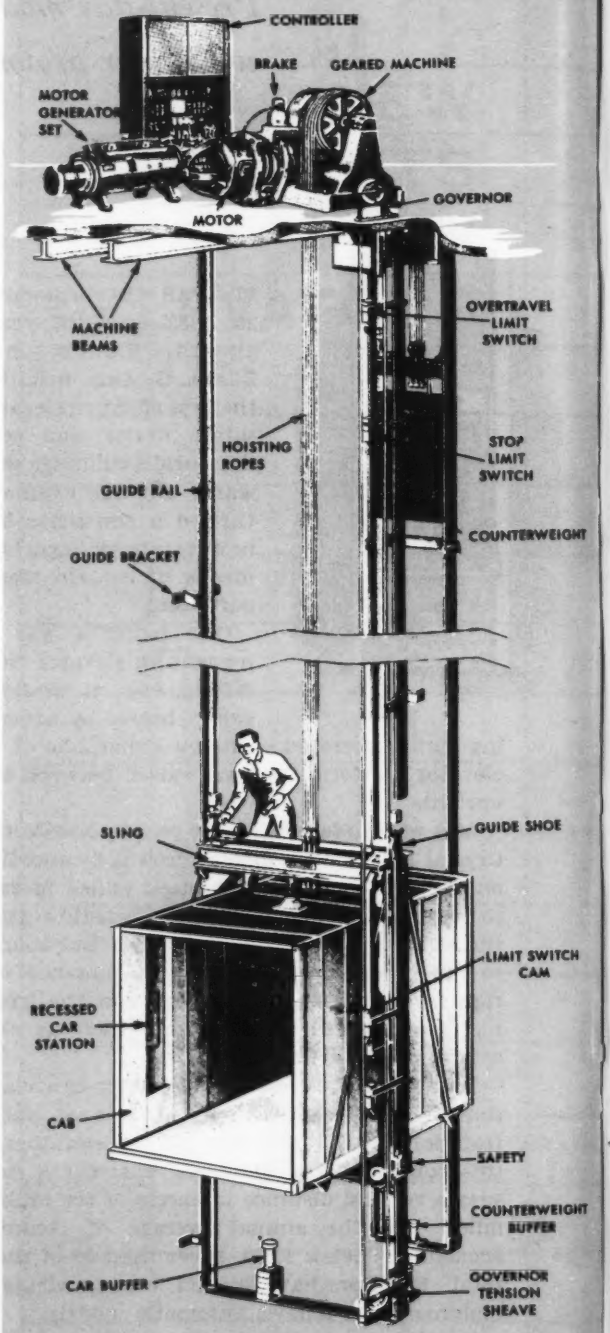
Electric motors, mounted in an overhead machine room, saved space previously taken by cumbersome steam-generating equipment.

Another major development, also credited to Otis Elevator Company, was the self-leveling elevator developed in 1915. This device automatically brings the car platform even with the landing and maintains the level regardless of load increases.

Within the past 40 years additional refinements in elevator construction have included variable voltage control to set car speeds; automatic push buttons to call cars for passenger operation; dual controls that permit elevators to be operated with or without attendants; collective controls to make multiple elevators operate in unison.

Most important of recent developments, however, have been improvements in door interlocks and gate contacts. These are of prime importance to passenger safety since more than 80 per cent of all elevator accidents happen at landings, usually because of passenger carelessness.

Interlocks prevent opening of hoistway doors unless the car is at the corresponding floor



Insurance inspectors begin checking elevators in the machine room, then ride down on top of the car to see hoist cables and guide rails. Riding inside the car, inspectors try every gate interlock and door contact. Accidents are sharply reduced by thorough inspections.

and also delay operation of the cab until the car gate is closed.

Improvements have also been made in oil buffers, which cushion the impact of elevators that fall to the bottom of their pits. Such accidents, however, are exceedingly rare because of Otis's car safety which has now been developed so that it will gently stop any elevator in less than 40 feet.

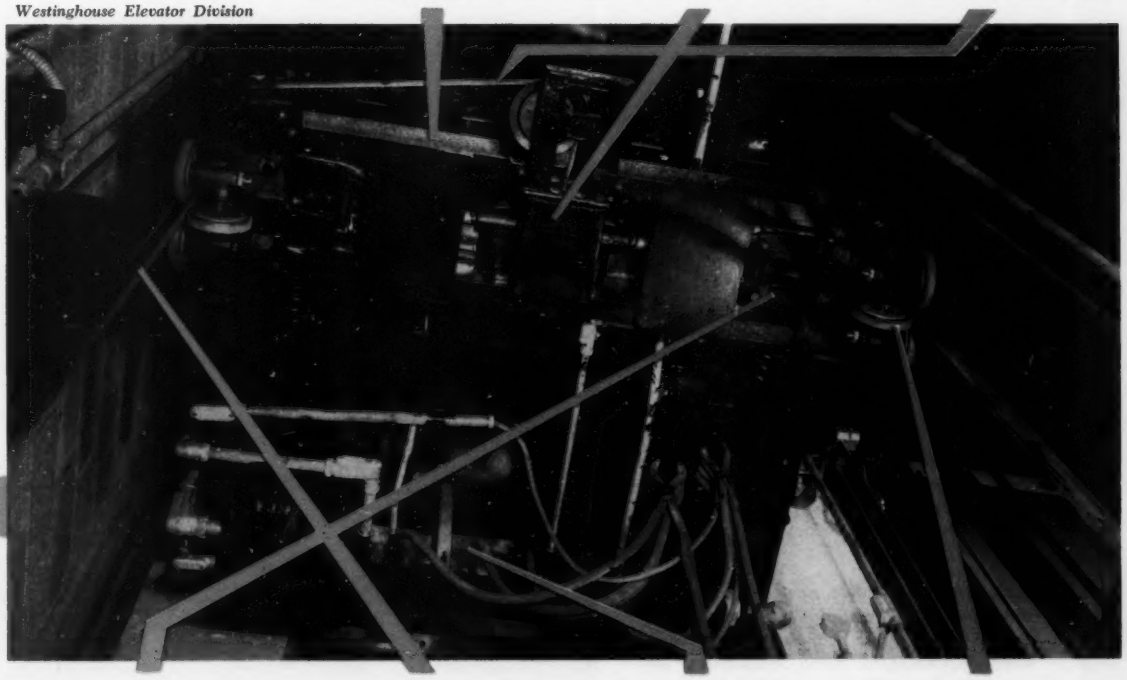
The first of such rare emergencies happened in the Empire State Building in 1945 when a single elevator fell 17 floors after an airplane crashed through the hatchway on the 89th floor and severed all hoisting and governor cables. Even in this instance, pit-bottom buffers saved the life of the operator, the only occupant of the fallen car.

Thorough inspections of elevators are conducted thousands of times each year by insurance loss prevention personnel. They often result in recommendations to the elevator owner, manufacturing company or management personnel. Educational campaigns in elevator safety have been recommended in plants where unusual elevators, particularly freight carriers, are in operation.

This continuing vigilance, as much as Mr. Otis's safety device, has made elevators the safest means of power transportation in the world. ○

Inspector's-Eye View of Elevator Safety Device

Westinghouse Elevator Division



1. Bottom safety beam contains modern adaptations of Otis's 1853 safety device. It will stop a falling or speeding elevator cab in 1 to 40 feet, even if hoist cables break.

2. Drum holds cable connected to the governor in the machine room. It was Elisha Otis's son, Charles, who invented the elevator governor which actuates the safety device.

3. Control cable running from a governor and around the drum connects to clamps which are set to grab two guide rails in case the car overspeeds or begins to fall downward.

4. Gradual application wedge clamps, used on this rapid passenger elevator, are but one of many types of brake devices. Freight elevators may use instant safety clamps.

5. Guide rails on either side of the elevator provide smooth, safe ride. Clamps grab the rails to stop the cab in an emergency. Guides keep the elevator steady as it moves.

6. Electric connecting wires run to the cab's journal box. In recent years electricity has been used to make elevators safer by improving contacts, speed controls and signals.

7. Roller guides running on the guide rails have made today's elevators run smoothly even at rapid speeds. Before the rollers were used, elevators ran on crude babbitts.

Chicago Tribune

Underwater search and rescue is one of divers' main services. Here, 178 men joined sheriff's search for missing Chicago judge last November. All experienced divers, they signed waivers of liability before entering icy waters. The judge's body was found in Lake Michigan months later.

OUR UNDERWATER W

U.S. Coast and Geodetic Survey

Photography brings whole new underwater world home to landlubbers: marine life, underwater missile firings, shipwrecks. These divers recorded durability of radioactive waste disposal drums dumped to ocean bottom. Movie and still cameras rent for $250 a day, need insurance.

Underwater exploration, mapping are vital to navigation, offshore oil drilling, salvage. Here, Ronald Reed checks Caribbean coral reefs. One firm, Geological Diving Consultants of San Diego, has made more than 10,000 dives since 1953 without mishap, credits training, caution.

ER WORLD

As divers explore this next-to-last frontier, insurance must pioneer new coverages to protect them.

SPACE TRAVEL is just a step away, and like every forward-looking business, insurance is cogitating its role in space life. But there is another adventure-filled world even closer at hand, already filled with several million fin-flapping pioneers in need of insurance protection and loss-prevention precautions.

It's the fearsome, fascinating, little-known world underwater — as fraught with problems and promise as the vastness of outer space. Once inhabited only by marine life and an occasional pearl diver or clam-catcher, it has been invaded, largely since World War II, by as many as six million divers — sportsmen, policemen, photographers, builders, geologists, biologists, archeologists, treasure-hunters — all out with their aqualungs and snorkels exploring the world beneath the waves.

Whatever their purposes in making like porpoises, these skin- and SCUBA-divers who spread from the Atlantic Coast to the Arizona desert pose problems for safety and insurance people. These problems seldom can be solved in advance because experience is still so scarce on what goes on in the watery deep. Yet insurance must be provided, because it is needed. And so insurers, among others, are having to quickly learn about this new and multiplying breed of risks they're being asked to protect, and about the hazards divers face.

Most divers—two-thirds or more—dive just for the sport of it. The others are in businesses ranging from collection of marine biology specimens to scouting sites for offshore oil drilling, from construction of underwater missile launching pads to digging for sunken cities like Sodom and Gomorrah. But all divers, amateur or professional, want insurance protection against two things: personal injury and property loss.

A diver's property may be piddling at first—just face mask, fins and snorkel suffice at a total cost of $15 to $20. But before long many tire of simple near-surface diving and turn to SCUBA — self-contained underwater breathing apparatus. It enables a diver to go deeper, stay down longer than skin divers, and move around more freely than the deep-sea diver encumbered by pressure suit and air lines to the surface. SCUBA diving also runs into money—for tanks of compressed air, automatic breathing regulator, tubes and mouthpiece, probably a depth gauge, diving suit, weight belt and weights. A SCUBA diver can easily spend $500 getting outfitted, and if he goes in for spear guns or underwater photography, his investment grows. One professional diver counted $8,000 worth of equipment he uses in his work. U. S. divers alone spent more than $30 million on equipment last year, one company estimated.

A trained, experienced diver should be able to get insurance on his equipment without much trouble. It's the brand-new, eager-eyed amateur who makes insurers shudder, for they've found this type tends to panic when he thinks anything has gone wrong underwater and may jettison his equipment with scarcely a second thought.

What is far more serious, though, is when something actually does go wrong underwater. So many things can and do happen—air embolism, which may cause sudden death; decompression sickness ("the bends"), the single greatest hazard to commercial divers and common among high-altitude aviators; oxygen poisoning; nitrogen narcosis, which resembles intoxication but without the hang-over; face "squeeze"; ear damage; exhaustion; equipment failure—or sharks.

America's first spaceman will be so wired for sound that doctors on the ground will know if he so much as belches, but an underwater traveler may battle a giant barracuda or drift into a subterranean cave and disappear, with no one topside being aware.

Some hazards are in the diver's power to control. An experienced and careful diver knows enough not to dive if he is not in perfect health, or if weather conditions are not right. He respects his limitations in an environment for which the human body was never intended. He times his descents and ascents carefully, keeps in constant communication with companions on the surface, limits the number, depth and duration of his dives. Even so, with every

U.S. Coast and Geodetic Survey

"I would rather insure professional divers than pedestrians," says Dr. Harris B. Stewart, Jr., government oceanographer (center). Amateurs, too, are better trained today than formerly.

possible precaution taken, there are potential hazards inherent in underwater diving that make it a poor risk in the opinion of many insurers.

Interestingly, one large national casualty company insures several amateur "weekend divers' clubs" and doesn't consider them particularly bad risks. But this same company classes commercial divers, no matter how experienced, as among the worst risks around, simply because they spend their working hours in a part of the world that is still largely unknown.

Carriers of workmen's compensation sometimes find divers cause special problems for them. If divers are employed by a company—as many are, for underwater construction and repair, geological exploration and other purposes—they come under workmen's compensation just as a carpenter would. However, the company using divers may find its premiums higher or its business less desirable to insurers because of that inherent risk. Just as steel erection is considered inherently more hazardous than plumbing, for example, diving has a higher hazard exposure than bricklaying.

Many divers work as independent contractors on assignments, and seek their own insurance. One diver, who earns $125 to $250 a day, pays $13 per working day for his coverage and feels it is too much. In his opinion diving is not so hazardous that extra-risk premiums should be charged. Most insurers admit their experience in covering divers is limited, but the relatively high accident rates so far have given them little chance to cut costs.

Accidents have shown the need of yet another type of diving insurance. It is liability coverage for those employing divers, whether they carry insurance on themselves or not. A Chicago case points up the reason: A diver was hired by a construction firm to close a small escape gate leading to a new water tunnel. Water pressure pinned him against the opening. It took rescuers 5½ hours to free him. When they did, the diver charged they brought him to the surface too fast, and he suffered the bends. As a result of their negligence, he was crippled and is no longer able to dive, he said. He filed a lawsuit against the contractor and the city of Chicago for $1 million damages.

As long as there are divers, such accidents can and will happen, demonstrating the need for safety precautions and insurance protection. And there is little doubt that despite the hazards, there will be divers—more and more of them. For there is business in that almost unreal world below—recovering bodies and evidence of crimes; salvaging wrecked ships and planes; discovering lost civilizations, or lost diamond rings. There is pleasure down there, too, from spearfishing to underwater hockey. And there also is treasure; diving expeditions are seeking such things as a gold statue of Christ, said to be worth $1.4 million, sunk off Port Said in 1917, and a rumored $75 million in gold aboard the Spanish Armada, sunk off the coast of Spain.

Pastime Has an All-Year-Round Allure

Whatever the specific mission, there is always the lure of freedom—freedom of a sort seldom experienced by man. Moving underwater gives the weightless, three-dimensional freedom spacemen will feel. It's the nearest man can come now to escaping from gravity and flying without wings.

Perhaps that explains the fervent devotion divers have for the pastime all year round. It must explain why last March 8, the impatient Sea Kings of Detroit dug through 14 inches of snow and 8 inches of ice to make their first dive of the year. The water temperature, they reported, was 35 degrees, and visibility was very good. Divers ask for nothing more. ⊙

Commissioner Joe B. Hunt has been in the Oklahoma insurance picture for the past 20 years and commissioner since 1954.

HUNT OF OKLAHOMA

OKLAHOMA'S STATE CAPITOL does not have an oil derrick running through its center for the simple reason that the government building got there ahead of the drillers.

Even that didn't stop oil men from digging up the capitol's lawn—with the state's consent—to bring up the "black gold." One of the 20 wells surrounding the building in Oklahoma City was drilled at an angle to draw oil from a pool directly below the big five-story structure.

Ever since the nation's first flowing commercial well was brought in more than 100 years ago near Salina, oil and Oklahoma have been synonymous. Today there are more than 80,000 oil and natural gas wells in 70 of Oklahoma's 77 counties. Oil is being pumped out of the state's rich ground at a rate of about 600,000 barrels a day.

Oklahoma also is one of the nation's aircraft and missile centers. A site near Altus was selected for a $47 million Atlas missile facility. Callery Chemical's $38 million plant at Muskogee is the world's largest high-energy fuel plant, and Tulsa, "the Oil Capital of the World," is the location of American Airlines' new $20 million jet service center, the first of its kind anywhere.

In sharp contrast to her many bustling industries is Oklahoma's natural vacationland. The Sooner State's network of rivers and streams offers some of the finest fishing in the country. More than 400,000 acres of game preserves and game management areas where buffalo herds and other wild animals and birds can be viewed in their natural habitat are located in Oklahoma. The Sooner State is also proud to claim the title of "Indian Capital of the U. S.," for it has more American Indians than all other states combined.

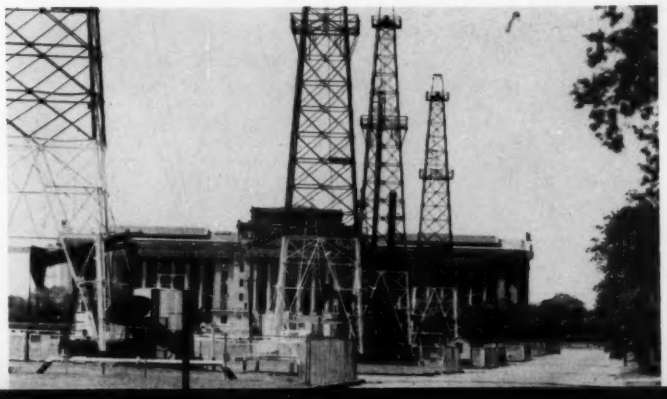
Standing guard over this wide range of citizenry and industry is the state's third largest business—insurance. Last year Oklahoma policyholders paid $330 million in premiums to the nearly 800 insurance companies licensed in the state.

Insurance Commissioner Joe B. Hunt, who has held the state's top insurance post since 1954, was the first Oklahoman in 44 years to be elected to that office without having served as the incumbent through gubernatorial appointment. In 1958 Hunt was re-elected, carrying all of the state's 77 counties.

Commissioner Hunt's insurance career includes his being appointed manager of the rating department of the state insurance board in 1942. He served with the department until his election. Hunt has just served out a term as chairman of Zone 5 of the National Association of Insurance Commissioners.

During Hunt's first term of office as insurance commissioner, the state legislature passed a new insurance code which completely revamped Oklahoma's somewhat antiquated insurance laws. This was the largest single piece of legislation ever enacted in the state. Oklahoma State University awarded Hunt its "Oscar" as the outstanding person of the year in the insurance industry for his work in promoting this legislation.

Hunt's activities go far beyond the scope of the insurance industry. In 1957 the Citation for Meritorious Service was conferred upon him by the President's Committee on Employment of the Physically Handicapped for his contributions in advancing the employment of the physically handicapped. ⊙



Symbolic of the important role oil plays in Oklahoma's economy is the lawn of the state Capitol and its towering derricks.